

We claim:

1. An homogenate prepared from cells of *Neospora* which is capable of inducing a protective response against neosporosis in a mammal.
2. The homogenate of claim 1, wherein the species of *Neospora* from which the
5 homogenate is prepared is *N. caninum*.
3. The homogenate of claim 1, which is capable of inducing the production of antibodies that recognize one or more antigenic components present in an homogenate of cells of *N. caninum* strain NC-1.
4. The homogenate of claim 3, wherein the species of *Neospora* from which the
10 homogenate is prepared is *N. caninum*.
5. The homogenate of claim 4, wherein the strain of *N. caninum* from which the homogenate is prepared is NC-1.
6. The homogenate of claim 1 which is prepared from tachyzoites.
7. A vaccine to protect a mammal against neosporosis, comprising an
15 immunologically effective amount of an homogenate prepared from cells of *Neospora*, which homogenate is capable of inducing a protective response against neosporosis in a mammal, and a veterinarily acceptable carrier.
8. The vaccine of claim 7, wherein the species of *Neospora* from which the homogenate is prepared is *N. caninum*.
- 20 9. The vaccine of claim 7, which is capable of inducing the production of antibodies that recognize one or more antigenic components present in an homogenate of cells of *N. caninum* strain NC-1.
10. The vaccine of claim 9, wherein the species of *Neospora* from which the homogenate of the vaccine is prepared is *N. caninum*.
- 25 11. The vaccine of claim 10, wherein the strain of *N. caninum* from which the homogenate of the vaccine is prepared is NC-1.
12. The vaccine of claim 7, wherein the homogenate is prepared from tachyzoites.
13. The vaccine of claim 7, further comprising one or more additional
30 immunomodulatory components
14. The vaccine of claim 13, in which the additional immunomodulatory component is an adjuvant.
15. The vaccine of claim 14, in which the adjuvant is selected from the group consisting of the RIBI adjuvant system (Ribi Inc.), alum, aluminum hydroxide gel, an oil-in-
35 water emulsion, a water-in-oil emulsion, Block co polymer, QS-21, SAF-M, AMPHIGEN® adjuvant, saponin, Quil A, monophosphoryl lipid A, and Avridine lipid-amine adjuvant.

16. The vaccine of claim 15, in which the adjuvant is an oil-in-water emulsion selected from the group consisting of SEAM62 and SEAM 1/2.

17. The vaccine of claim 13, in which the additional immunomodulatory component is a cytokine.

5 18. The vaccine of claim 7, wherein the *Neospora* cells from which the homogenate is prepared have been modified to delete the expression of one or more antigenic components normally associated with *Neospora* cells or a homogenate prepared therefrom.

19. A method for preparing a vaccine that protects a mammal against neosporosis, comprising homogenizing cells from *Neospora* to produce an homogenate capable of inducing a protective response against neosporosis in a mammal, and combining
10 an immunologically effective amount of the homogenate with a veterinarily acceptable carrier.

20. The method of claim 19, wherein the species of *Neospora* from which the homogenate is prepared is *N. caninum*.

21. The method of claim 19, wherein the vaccine is capable of inducing the
15 production of antibodies that recognize one or more antigenic components present in an homogenate of cells of *N. caninum* strain NC-1.

22. The method of claim 21, wherein the species of *Neospora* from which the homogenate of the vaccine is prepared is *N. caninum*.

23. The method of claim 22, wherein the strain of *N. caninum* from which the
20 homogenate of the vaccine is prepared is NC-1.

24. The method of claim 19, wherein the cells that are homogenized are tachyzoites.

25. The method of claim 24, wherein the tachyzoites are homogenized by freeze/thawing and sonication.

26. The method of claim 19, further comprising adding one or more additional
25 immunomodulatory components to the vaccine.

27. The method of claim 26, wherein the additional immunomodulatory component is an adjuvant.

28. The method of claim 26, wherein the additional immunomodulatory
30 component is a cytokine.

29. A method for protecting a mammal against neosporosis, comprising administering to the mammal a vaccine comprising an immunologically effective amount of an homogenate prepared from cells of *Neospora*, which homogenate is capable of inducing a protective response against neosporosis in a mammal, and a veterinarily acceptable carrier.

30. The method of claim 29, wherein the species of *Neospora* from which the
35 homogenate is prepared is *N. caninum*.

31. The method of claim 29, wherein the vaccine is capable of inducing the production of antibodies that recognize one or more antigenic components present in an homogenate of cells of *N. caninum* strain NC-1.

5 32. The method of claim 31, wherein the species of *Neospora* from which the homogenate of the vaccine is prepared is *N. caninum*.

33. The method of claim 32, wherein the strain of *N. caninum* from which the homogenate of the vaccine is prepared is NC-1.

34. The method of claim 29, wherein the homogenate of the vaccine is prepared from tachyzoites.

10 35. The method of claim 29, wherein the vaccine further comprises one or more additional immunomodulatory components

36. The method of claim 35, wherein the additional immunomodulatory component is an adjuvant.

15 37. The method of claim 35, wherein the additional immunomodulatory component is a cytokine.

38. The method of claim 29, wherein the vaccine is administered to a mammal of a species selected from the group consisting of dogs, cows, goats, sheep and horses.

20 39. A combination vaccine for protecting a mammal against neosporosis and, optionally, one or more other diseases or pathological conditions that can afflict the mammal, which combination vaccine comprises an immunologically effective amount of a first composition comprising an homogenate prepared from cells of *Neospora*, which homogenate is capable of inducing a protective response against neosporosis in a mammal; an immunologically effective amount of a second composition capable of inducing a protective response against a disease or pathological condition that can afflict the mammal; and a
25 veterinarianly acceptable carrier.

40. The combination vaccine of claim 39, wherein the species of *Neospora* from which the homogenate of the first composition is prepared is *N. caninum*.

30 41. The combination vaccine of claim 39, which is capable of inducing the production of antibodies that recognize one or more antigenic components present in an homogenate of cells of *N. caninum* strain NC-1.

42. The combination vaccine of claim 41, wherein the species of *Neospora* from which the homogenate of the first composition is prepared is *N. caninum*.

43. The combination vaccine of claim 42, wherein the strain of *N. caninum* from which the homogenate of the first composition is prepared is NC-1.

35 44. The combination vaccine of claim 39, wherein the homogenate of the first composition is prepared from tachyzoites.

45. The combination vaccine of claim 39, wherein the second composition is capable of inducing in the mammal a protective response against a pathogen selected from the group consisting of bovine herpes virus, bovine respiratory syncytial virus, bovine viral diarrhea virus, parainfluenza virus types I, II, or III, *Leptospira* spp., *Campylobacter* spp.,
5 *Staphylococcus aureus*, *Streptococcus agalactiae*, *Mycoplasma* spp., *Klebsiella* spp., *Salmonella* spp., rotavirus, coronavirus, rabies, *Pasteurella haemolytica*, *Pasteurella multocida*, *Clostridia* spp., *Tetanus* toxoid, *E. coli*, *Cryptosporidium* spp., *Eimeria* spp. and *Neospora* spp.

46. A kit for vaccinating a mammal against neosporosis, comprising a first
10 container having an immunologically effective amount of an homogenate prepared from cells of *Neospora*, which homogenate is capable of inducing a protective response against neosporosis in a mammal, and a second container having a veterinarily acceptable carrier or diluent.

47. An antibody specific to an antigenic component present in an homogenate of
15 *Neospora* cells.

48. The antibody of claim 47, which is specific to an antigenic component present in an homogenate prepared from *N. caninum* cells.

49. The antibody of claim 48, which is specific to an antigenic component present in an homogenate prepared from cells of *N. caninum* strain NC-1.

50. The antibody of claim 49, wherein the antigenic component has a molecular
20 weight selected from the group consisting of 17-19, 28-30, 33, 37, 46, 48, and 56 kD.

51. The antibody of claim 47, further comprising a detectable label.